

CLAIMS:

What is claimed is:

1 1. A reduced sensitivity spin valve sensor apparatus,
2 comprising:
3 a spin valve sensor; and
4 a pair of magnetic shields, wherein a spacing
5 between the spin valve sensor and each magnetic shield of
6 the pair of magnetic shields is reduced relative to
7 standard spin valve sensor apparatus to thereby reduce a
8 flux injection efficiency of the spin valve sensor.

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1 2. The reduced sensitivity spin valve sensor apparatus
2 of claim 1, wherein the spacing between the spin valve
3 sensor and each magnetic shield is reduced by decreasing
4 a thickness of an insulating layer between the spin valve
5 sensor and the magnetic shields.

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1 3. A spin valve sensor apparatus, comprising:
2 a first spin valve sensor;
3 a second spin valve sensor; and
4 at least one flux guide, wherein a flux generated by
5 the at least one flux guide is shared between the first
6 spin valve sensor and the second spin valve sensor to
7 thereby reduce a sensitivity of the spin valve sensor
8 apparatus.

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1 4. The spin valve sensor apparatus of claim 3, wherein
2 the sharing of the flux between the first spin valve

3 sensor and the second spin valve sensor reduces a flux
4 injection efficiency of the spin valve sensor apparatus.

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1 5. The spin valve sensor apparatus of claim 3, wherein
2 the at least one flux guide includes a top flux guide and
3 a bottom flux guide.

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1 6. The spin valve sensor apparatus of claim 5, wherein
2 the top flux guide is positioned between the first spin
3 valve sensor and the second spin valve sensor, and the
4 bottom flux guide is positioned nearest a side of the
5 second spin valve sensor that is furthest away from the
6 first spin valve sensor.

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1 7. The spin valve sensor apparatus of claim 3, further
2 comprising planars, wherein the second spin valve sensor
3 is positioned on the planars.

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1 8. A method of making a reduced sensitivity spin valve
2 sensor apparatus, comprising:

3 providing a spin valve sensor; and

4 providing a pair of magnetic shields, wherein a

5 spacing between the spin valve sensor and each magnetic
6 shield of the pair of magnetic shields is reduced
7 relative to standard spin valve sensor apparatus to
8 thereby reduce a flux injection efficiency of the spin
9 valve sensor.

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1 9. The method of making a reduced sensitivity spin
2 valve sensor apparatus of claim 8, wherein the spacing

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3 between the spin valve sensor and each magnetic shield is
4 reduced by decreasing a thickness of an insulating layer
5 between the spin valve sensor and the magnetic shields

1 10. A method of making a spin valve sensor apparatus,
2 comprising:

3 providing a first spin valve sensor;

4 providing a second spin valve sensor; and

5 providing at least one flux guide, wherein a flux

6 generated by the at least one flux guide is shared

7 between the first spin valve sensor and the second spin

8 valve sensor to thereby reduce a sensitivity of the spiral

9 valve sensor apparatus.

11. The method of making a spin valve sensor apparatus
of claim 10, wherein the sharing of the flux between the
first spin valve sensor and the second spin valve sensor
reduces a flux injection efficiency of the spin valve
sensor apparatus.

1 12. The method of making a spin valve sensor apparatus

2 of claim 10, wherein providing the at least one flux

3 quide includes providing a top flux quide and a bottom

4 flux quide.

¹ See, for example, the discussion of the 1992 Constitutional Convention in the *Constitutional Convention of 1992: The Final Report* (1993).

1 13. The method of making a spin valve sensor apparatus
2 of claim 12, wherein providing the top flux guide
3 includes positioning the top flux guide between the first
4 spin valve sensor and the second spin valve sensor, and
5 providing the bottom flux guide includes positioning the

6 bottom flux guide nearest a side of the second spin valve
7 sensor that is furthest away from the first spin valve
8 sensor.

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1 14. The method of making a spin valve sensor apparatus
2 of claim 3, further comprising providing planars, wherein
3 providing the second spin valve sensor includes
4 positioning the second spin valve sensor on the planars

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